

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An apparatus for registering images from a source digital display device to individual frames of continuous movie film media ~~with resolution and contrast greater than an inherent capability of a source of display~~, comprising:

a film recording device configured to selectively and repeatedly expose the same individual frames of said film media;

an electronically addressable flat panel display device driven directly from a computer and controllable at pixel level, said flat panel display device being configured as a source to display sequences of a plurality of source static images, in color component form, each said plurality of static images being associated for exposure with said single individual frames of the film media sequentially, a sequence of said static images comprising a frame; and

an alignment unit coupled to the film recording device and to the display device, wherein the alignment unit is configured to position the flat panel display device with respect to the film recording device such that the film recording device can expose the film media to the plurality of static images with positionally repeatable registration of each color component of each pixel and in order to minimize optical aberrations at said film media,

said flat panel display and said alignment unit cooperating to expose said individual frames of said film recording device so as to register final image features on said individual frames of said film media with resolution and contrast greater than inherent capabilities of said flat panel display and not presented by a any single source static image of said flat panel display, ~~including colors and contrast levels, that cannot be presented by said flat panel display.~~

2. (Previously presented) The apparatus of claim 1, wherein the flat panel display device is one of the group: liquid crystal display (LCD), organic light emitting diode

(OLED) display, plasma display, electro luminescent (EL) display, silicon crystal display, liquid crystal display on silicon (LCOS) and wherein the flat panel display is an array having at least 3480 x 2400 pixels.

3. (Previously presented) The apparatus of claim 1, wherein the alignment unit comprises a distance adjustment unit configured to adjust a distance from the film recording device to the display device for changing effective resolution.

4. (Previously presented) The apparatus of claim 3, further comprising:
a control unit coupled to the distance adjustment unit, wherein the control unit is configured to control the adjustment unit to adjust the distance from the film recording device to the display device for changing effective resolution.

5. (Previously presented) The apparatus of claim 1, wherein the alignment unit further comprises an X-Y-Z gimbal coupled to the flat panel display device, wherein the X-Y-Z gimbal is configured to adjust an orientation of the flat panel display with respect to the film recording device to compensate for said optical aberrations due to off-axis alignment between said film media and said flat panel display.

6. (Previously presented) The apparatus of claim 1, wherein the film recording device is one of the group: 16mm film camera, 35mm film camera, 70 mm film camera.

7. (Canceled).

8. (Previously presented) The apparatus of claim 1 further comprising an illumination source disposed relative to said flat panel display on a side opposite side from said film recording device and configured to increase output brightness of at least a portion of the display of the plurality of images and to illuminate said flat panel display with back light for reproduction of said final image by said film recording device.

9. (Previously presented) The apparatus of claim 8, wherein the illumination source is one of the group: light emitting diode, light emitting diode array, strobe lamp, strobe lamp array, digital light projector.

10. (Previously presented) The apparatus of claim 8 wherein the illumination source provides different color illumination to different portions of the flat panel display device.

11. (Previously presented) The apparatus of claim 8 wherein the illumination source comprises red LEDs, blue LEDs, and green LEDs, and

wherein the red LEDs are configured to produce a peak wavelength selected from the group: 650nm, 630nm;

wherein the green LEDs are configured to produce a peak wavelength selected from the group: 550nm, 530nm; and

wherein the blue LEDs are configured to produce a peak wavelength selected from the group: 450nm, 445nm.

12. (Currently amended) A method of recording sequences of a plurality of images from a source digital display device onto individual frames of continuous film media, the method comprising:

positioning an optical axis of a display portion of an electronically addressable flat panel display that is driven directly from a computer and controllable at pixel level to be approximately parallel to an optical axis of a film recording ~~unit~~ device; and, for each sequence,

displaying a first image in color component form on the display portion of the flat panel display for a first duration;

exposing a first frame of the film media to the first image on the display portion for a second duration;

displaying a second image in color component form on the display portion of the flat panel display for a third duration; and

exposing said first frame of the film media to the second image on the display portion with positionally repeatable registration of each color component of each pixel for a fourth duration; and repeating said displaying and exposing steps for each successive frame so as to register final image features on said individual frames of said film media with resolution and contrast greater than inherent capabilities of said flat panel display and not presented by a any single source static displayed image, including colors and contrast levels, that cannot be generated by of said flat panel display.

13. (Previously presented) The method of claim 12, further comprising adjusting a focal length of a lens of the film recording device in response to a distance from the flat panel display to the film recording device and in response to a size of the display area and repositioning the optical axis of the display portion of the flat panel display to compensate for off-axis aberration.

14. (Previously presented) The method of claim 12, further comprising adjusting the second duration in response to the image to control said final image features.

15. (Canceled).

16. (Previously presented) The method of claim 12, wherein the flat panel display is a display from the group: LCD, OLED display, plasma display, EL display, silicon crystal display, LCOS display and wherein the flat panel display is an array having at least 3480 x 2400 pixels.

17. (Previously presented) The method of claim 12 further comprising providing external illumination from an external illumination source to the flat panel display; wherein the external illumination source is one of the group: LED, LED array, strobe lamp, strobe lamp array, digital light projector configured to illuminate said flat panel display with back light for registering said final image features by said film recording device.

18. (Previously presented) The method of claim 17 wherein the external illumination source comprises at least one digital light projector configured to display images in RGB and CMY color space.

19. (Previously presented) The method of claim 17 wherein the external illumination increases the brightness of at least a portion of the flat panel display for registering said final image features in the film media.

20. (Previously presented) The method of claim 17 wherein a resolution of the flat panel display is different from a resolution of the external illumination source and further including the step of spatially dithering to register said final image features.

21. (Original) The method of claim 20 wherein the external illumination source provides a first illumination color to a first portion of the display portion and provides a second illumination color to a second portion of the display portion at the same time.

22. (Canceled).

23. (Original) The film media including the image exposed according to the method of claim 12.

24. (Currently amended) A method for forming a recorded film media comprising:

aligning an optical axis of a film recorder to be substantially parallel to an optical axis of the digital flat panel display;

displaying a plurality of static images in color component form sequentially on a digital flat panel display driven directly from a computer and controllable at pixel level, said plurality of static images to be recorded onto a single frame of unexposed film media;

aligning an optical axis of a film recorder to be substantially parallel to an optical axis of the digital flat panel display;

controlling a shutter of the film recorder to expose the single frame of the unexposed film media with more than one image from the plurality of images with positionally repeatable registration of each color component of each pixel to register final image features on the film media on said individual frames of the film media with resolution and contrast greater than inherent capabilities of the digital flat panel display and not able to be presented by a any single displayed image.

25. (Canceled).

26. (Original) The method of claim 24 wherein spatial dithering techniques are used for images from the plurality of images.

27. (Original) The method of claim 24 wherein the digital flat panel display is selected from the group: LCD, OLED, plasma, EL, silicon crystal display, LCOS display.

28. (Canceled).

29. (Previously presented) The method of claim 24 further comprising illuminating the flat panel display with an external illumination source disposed to provide backlight, wherein the external illumination source is an illumination source from the group: white LED, colored LED, LED array, strobe lamp, array of strobe lamps, digital light projector.

30. (Canceled).

31. (Previously presented) The method of claim 24 further comprising:
illuminating the flat panel display with an external illumination source disposed to provide backlight,
wherein the external illumination source is an addressable source, such that the external illumination source illuminates different portions of the flat panel display with different illumination colors.

32. (Original) The method of claim 31 wherein the external illumination source also illuminates different portions of the flat panel display with different intensities.

33. (Original) The method of claim 29 wherein the external illumination source comprises light guides.

34. (Canceled).

35. (Original) The method of claim 24 further comprising printing an interpositive from the recorded film media.